Credit and liquidity in Interbank Rates: A Quadratic Approach

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General comments

- Motivation of the paper
  - To disentangle credit and liquidity effects on the EURIBOR-OIS spread.

- Relevant issue
  - Sharp increase in the rates on the unsecured term interbank markets during the crisis
    - With a peak in fall 2008.
  - The underlying question is how to address a rise in spreads
  - If liquidity effects: then the ECB must provide more liquidity
  - If default risk at stake: then supervision authorities should strengthen bank capital

- Global assessment
  - Stimulating paper,
  - Well written
  - Uses suitable methodology
  - Get clear results
Methodology

- **Arbitrage-free quadratic term structure model (QTSM)**
  - Better fit the data than the ATSM
    - Advantage of providing positive values for intensities,
  - 2 factors

- **Identification of the 2 factors**
  - Liquidity proxy: First principal component of 3 liquidity variables
  - Credit proxy: first principal component of a set of 36 euro-zone banks’ CDS
  - Use an “augmented Kalman Filter” for estimating QSTM by Monfort, Renne and Rousselet (2013)
  - Estimation on weekly EURIBOR-OIS spreads:
    - 3M, 6M, 9M, 12M maturities
Main findings

1. Liquidity risk contributed most to the EURIBOR-OIS spread during the period
   - It explains the bulk of the 2 spikes in the spread, in fall 2008, and fall 2011.
   - Liquidity component is more volatile,
   - Credit risk component is more stable, plays a smaller part in the spikes

2. The effects of ECB operations are assessed
   - SMP had no effect on the spread neither on liquidity or credit component
   - 3-year LTRO and OMT announcements greatly reduced the spread, the liquidity problem.
   - Since VLTRO, liquidity component has been decreasing
Comment on the 1\textsuperscript{st} finding /prevalence of liquidity risk

- **What do the LIBOR and EURIBOR stand for?**
  - Data obtained on the basis of a panel of banks’ declarations / not real transactions
  - Risk of manipulation:
    - for the LIBOR, banks are asked what they think they would have to pay to borrow, \(\rightarrow\) incentive to underreport. As evidenced by the scandals revealed in summer 2012, Barclays being imposed $200m fee.
  - For the EURIBOR, smaller risk of manipulation
    - panel of 43 banks are asked what they think is the borrowing rate between two “prime” banks.
    - Less relevant, for it is not based on the rates paid by the answering banks.

- \(\rightarrow\) **The EURIBOR is the rate between 2 “prime banks”**
  - By definition, the EURIBOR can be interpreted as lower bound of rates on the unsecured interbank market
  - Most euro-zone banks can only borrow at rates above the EURIBOR (Eisenschmidt and Tapking, 2009)

=> **The EURIBOR under-assess the default risk of banks’ in the euro area**
  - No wonder that the liquidity component is predominant

- **What is a “prime bank” in the euro area?**
  - a “German bank”?
  - Widening gap between the costs of bank borrowing across euro zone countries
  - not able to reflect the default risk of banks, in peripheral countries.
What does the EURIBOR measure if the market is frozen and fragmented?

- **Volumes declined sharply on the unsecured term interbank market during the crisis**
  - Problem of “liquidity hoarding”?  
    - Banks owning cash prefer to deposit their funds at the ECB  
      - Most 3-year LTRO funds have been retrieved in the ECB deposits  
      - Banks needing liquidity go for the ECB financing.  
  - Interbank transaction concentrated on the overnight interbank market (EONIA), and on the repo (Eisenschmidt Tapking, 2009)

- **The EURIBOR has not been accessible for banks in peripheral countries**
  - Government bond spreads have widened across euro-zone countries, that is the same for corporate and banks.  
  - “The reference to EURIBOR is completely useless for Italian banks,” says Giovanni Sabatini, the managing director of the Italian Banking Association. "EURIBOR is less than 1% and our banks are paying 350-400 basis points above EURIBOR.” The Economist, July 2012."  
  - The same holds for the other peripheral countries, like Spain.

  ➔ **The EURIBOR measures a borrowing cost, that is hardly used.**  
    - The banks in the peripheral countries need liquidity but do not do not have access to the EURIBOR,
Comment on the 2nd finding on the ECB interventions

- **Effects of ECB operations**: SMP had no effect on the spread neither on liquidity or credit component; 3-year LTRO and OMT announcements greatly reduced the spread, especially the liquidity component.

- **Effect only assessed by looking at a graph**
  - Rigorous analysis to disentangle liquidity and credit effect.
  - But for the effect of monetary policy, you just look at a graph,
    - Ie liquidity component decreased the most after VLTRO, not surprising: handing €1tr to banks certainly alleviate tensions.
  - Maybe worth to better check for the results *ceteris paribus*:
    - Liquidity and credit shocks not only due to monetary policy.
    - Credit shocks: several bail-out of States, modified the pd of banks, Greek default, ...

![Figure 4: 6M EURIBOR - OIS spreads decomposition](chart.png)
The link between term-structure and liquidity risk

- **Liquidity premium increases with maturity (in bp)**
  - Results opposite from those of Ericsson and Renault (2008) for bonds
  - You discard the result, in saying that it is constant across maturities in % of the spread (as the term premium is actually increasing)
  - What it is relevant is the absolute level of the liquidity premium which does increase with the term

- Maybe, better to accept the result and find an interpretation
  - For example the model by Eisenschmidt and Tapkin (2012) can help explain the result for liquidity
  - As investors fear a liquidity crisis, they are reluctant to commit for lending long maturities
  - Turn to the overnight market they ask liquidity premia on long maturities.
Minor points, suggestions

- **Assuming that the short-term risk-free interest rate is exogenous**
  - Standard simplifying assumption
    
    \[ R_{t,h}^{EUR} = -\frac{1}{h} \log \left( \mathbb{E}_t^Q \left[ \exp \{-r_t - \lambda_{t+1} - \ldots - r_{t+h-1} - \lambda_{t+h}\} \right] \right). \]
  
  - \( \Rightarrow \) the spread between risky and risk-free asset does not depend on the short-term risk-free rate
  
  - In reality, during this period, the risk free rate has been reduced because of liquidity risk
  
  - Consequences of lifting this assumption, spread depends on a covariance term

- **Better justify the chosen model:** why is the quadratic form is better than linear with Markov-switching?

- Compare results with other models?

- **Check for the performance of the model out of the sample**
Conclusion

- Again, a very stimulating paper, worth to read,